1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

means of which a heavy stone anchor is attached to the lower corner of the net. After the net has been pushed into the water, the pole is pulled back and the shore end of the long top line from which the net is suspended is tied to it. Some fishermen tie this end to a stake driven into the bank of the river. The stone anchor is called čaqa'gm ("ground stone"); and the net, ļoļai'pañm, which means "into the eyes enters [the fish]." This name points to the casting of the net, because the fish becomes entangled in its meshes.

The ļoļai'pañm nets are set up along the seacoast as well as in rivers, in the latter case in quiet spots.

Measures for making this kind of net, — one of bone of whale, the other of the leg-bone of the wild reindeer, — and a wooden netting-needle, are shown in Fig. 71.

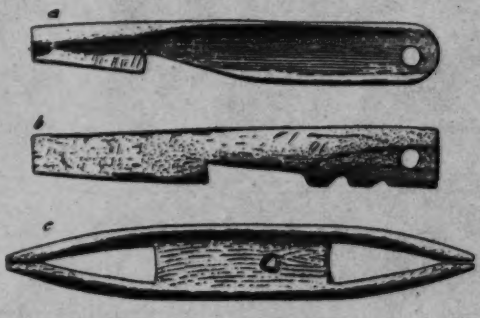

Fig. 71, *a* ($\frac{1}{3}$), *b* ($\frac{1}{3}$), Net-Measures; *c*, Netting-Needle. $\frac{1}{4}$ nat. size.

For catching the salveline and grayling, nets of the same type, made of nettle-thread, but with meshes of smaller size, with sinkers made of whale-vertebræ and with wooden floats, are set in the rivers. The Reindeer Koryak, who fish the salveline and grayling in summer in the tributaries of the larger mountain-streams, make their nets of sinew-thread, or buy nets made of nettle-thread from the Maritime Koryak, whose women are experts in nettle-working.

The Palpal Reindeer Koryak, who fish dog-salmon, humpback salmon, salveline, and rarely chawicha, in the Opuka, Po'qač, and Qayılın Rivers

Fig. 72 ($\frac{1}{3}$). Fish-Club. Length, 45 cm.

every summer, make nets principally of sinew-thread. The club for stunning the fish (Fig. 72) is usually made of heavy stone-pine wood.

Fig. 73 represents a fyke for salveline, with hoops. It is netted of nettle-thread. It is placed in shallow and swift places in the river. For this

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

411 ging the line along, but the necessity of breathing compels it to emerge.
225 Then the hunters endeavor to harpoon it again; but if the seal has been killed outright or severely wounded, it is dragged to the boat and lifted into it by means of hooks.

Whenever a hunter has caught a seal on shore, and has not succeeded in cutting off its retreat, he sends a harpoon after it without using a throwing-board. When hunting in kayaks, and in the pursuit of seals basking on ice-floes, both kinds of harpoons are employed, without the throwing-board, or with it; but the former method is in much more frequent use.

On floating ice, seals are hunted both at the beginning of summer and in autumn, when the ice, freezing near the shores, is torn off and carried out to sea. The hunters go out in a skin boat. On noticing one or more seals on a floe, one or more hunters are lowered into kayaks, and endeavor to approach the seal from under the wind, until within range of the harpoon. During this operation the hunters have bags made of the white skins of fawns over their heads and shoulders. If the seals notice the kayak, the hunter stops paddling and lets his white hood still farther down, so as to look like an ice-floe. As soon as the seals have become quiet, the hunter continues his approach. Grasping the harpoon with his right hand, ready for action, he tries at the same time to take hold of the floe, and to pull himself toward it with his left hand by means of a bone hook attached to a long pole (Fig. 91). In case the seal is asleep, the hunter may go up to the

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Fig. 91 ($\frac{1}{11}\frac{1}{12}$). Ice-Hook. Length, 160 cm.

ice-floe in his skin boat, and even climb up from the kayak. In the same manner rocks and islands on which seals lie are approached in kayaks.

225 Hunters in kayaks cut off the retreat to the sea, of seals which have
221 remained in shallow bays and river-estuaries during ebb-tide.

Winter supplies are principally obtained from the hunt in autumn. The seals caught from early until late in summer, and principally the spotted seals killed during the dog-salmon run, serve for immediate use only. It is impossible to lay by supplies at this season, because the meat decomposes rapidly. Besides, the seals are not very fat in summer.

During the fishing-season the hunters pay little attention to seal-hunting. They are too intent upon catching fish and preparing it for the winter supply. Besides, there is plenty of food in summer. It may happen that

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

semicircular cross-section (Fig. 97) was employed, which served as a plane, knives being inserted into the blade-holes.

Previous to the introduction of iron, spears were made of bone and stone. The stone spear is still in use, but only for hunting whales (see Fig. 93, p. 552). Traditions are still handed down concerning the bone spears which were used both in war and in hunting. Krasheninnikoff mentions the threepronged spears of the Koryak.[1] Presumably the iron spear superseded the old bone spear, at an early time. The spear played an important rôle in hand-to-hand fights. Tradition relates how the heroes, wielding only a spear, overcame their enemies. In olden times there were also contests with spears. Iron spears[2] are nowadays employed only in bear-hunting and in killing reindeer and dogs for sacrifice.[3] Every herdsman owns an iron spear, which is tied to the right side of the riding-sleigh, which is usually provided with bone rings for suspending it.

Fig. 97 (¹⁄₁₇). Bone Plane. Length, 7.5 cm.

Another weapon used in hand-to-hand fights was the big knife (mainowal). It was about 50–60 cm. long, with a short handle of bone. It was carried in a sheath on the left side, like a short-sword, suspended from a shoulder-strap. It is not known what kind of weapon was supplanted by the iron knife. The Yukaghir, according to tradition, used long battle-knives made of elk-ribs. The big knife is used at present chiefly by the Reindeer Koryak, who carry it on journeys and use it for chopping wood for the fire and for cutting frozen meat; but even in quite recent times this knife served as a weapon.

Judging from accounts of the customs of former times, the slung-shot must have been used in war. In consisted of a long thong of thong-seal hide, with a stone at its end. In one tradition which I recorded in Nayakhan, in which a battle between two heroes is described, it is related that the warrior from Nayakhan — who was known under the name of "Woman-Snatcher," because he took by violence all the women who pleased him — was once surprised by a hostile hero when he had no bow and spear, but only a slung-shot, which he wore like a belt. While dodging his adversary's arrows, he hurled his slungshot at the latter with such force that the line encircled his body several times and cut him in twain.

The Russians early introduced a wide-bore flintlock gun for hunting sea-mammals.[4] Powder and lead are supplied by the government and are sold at cost price. The lead bullets are made by the hunters themselves.

Some Koryak own Winchester rifles, which are obtained either directly

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[1] Krasheninnikoff, I, p. 51. [2] See Fig. 143

[3] See Part I, Plate VII, Fig. 2, opposite p. 80; and Part I, Plate X, opposite p. 96.

[4] For description compare, Bogoras, The Chukchee, Vol. VII of this series, p. 139.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

A stone bone-breaking set is one of the indispensable belongings of every household. It consists of a large stone slab or anvil, called ɪɲo'ŋɪn ("board-stone") and a stone pestle (cipe'iɪŋɪn) or hammer. Both are selected from among the water-worn pebbles on the banks of rivers. The Koryak themselves do not work them into shape. The board-stone must have one smooth, even surface; and the hammer, an oblong shape, round at the ends. Two hammers are shown in Fig. 102. On the board-stone, bones are crushed with

Fig. 102, *a* (1/5), *b* (1/5). Stone Hammers. Length, 12 cm., 17 cm. *a*, From Kamenkoye; *b*, From Tilqai River.

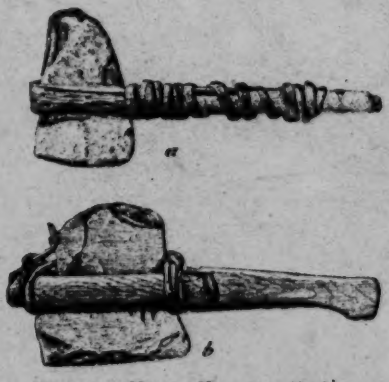

Fig. 103, *a* (1/5), *b* (1/5). Stone Hatchets. Length, about 30 cm.

the hammer to extract the marrow or to boil out the tallow for lighting; hard dried fish is softened on it or pounded with berries; roots are pounded for cooking gruel and for making puddings; and meat with fat is pounded for cutlets.[1]

Edible herbs, chiefly willow-herb (*Epilobium angustifolium*), are chopped on the stone anvil by means of stone hatchets. Two of these are shown in Fig. 103. The cutting-edge is sharpened by chipping, just like the edges of stone arrows and knives.[2] The handle of the hatchet *a* is made of a willow rod split in two and bent double, the hatchet being set between the two bent halves, the free ends of which are tied together with thongs. Another method of hafting is shown in *b*. The wooden handle is placed on one side of the hatchet, while on the other a short stick is applied, the ends of which are tied firmly to the handle. The grooved stone axe is held firmly between the two sticks.

The Koryak drink much water. They often get up in the night to take a drink of cold water, of which they always have a supply in wooden or

[1] See p. 578.

[2] See Chapter X.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

251 may remain with a scanty supply for winter use, owing to their ignorance of other methods of preserving fish than by sun-drying. The weather most favorable for preparing the yukola is during clear cool days, with a strong wind that scatters the flies. In general, yukola made of dog-salmon seemed [264] to me tasteless and dry; it cannot be compared with the fat juicy yukola made of the *Coregonida* of the Arctic rivers. Hence the Koryak, when eating dog-salmon yukola, dip it in seal-oil.

After the strips of meat for yukola have been cut off, some flesh still remains on the skeleton of the fish. A portion of this is cut off in thin slices, and dried in the sun on the sand or gravel of the river-banks. The skeletons of the fish are hung up to dry on ordinary drying-frames, and in winter serve as food for the dogs.

262 It is interesting to note that in cutting up herring, the ancient bone 252 knife only is used. Such a knife, made of the jaw-bone of a white whale, 412 is represented in Fig. 108. All other fish is cut with modern iron knives. This may be due to the convenience of the bone knife, — which is similarly still used by the Koskimo of Vancouver Island for cutting herring, — or it may be a taboo pointing to the fact that in former times herring played a more important part in the food of the Koryak than it does now. With reference to other species of fish, a taboo is observed of not cutting them across the body, but lengthwise only.

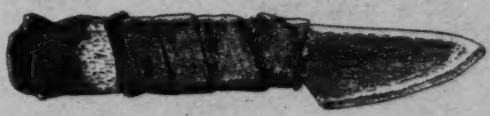

Fig. 108 ($\frac{1}{3}\frac{1}{1}\frac{1}{1}$). Bone Herring-Knife. Length, 22 cm.

251 I have already mentioned that in certain settlements, as in Itkana, where the catch of large salmon is small, the principal winter supply of fish consists of uyo'k *(Salmo socialis)*. This small fish is dried on the sand or gravel of the shore, on which it is spread in a thick layer. Heaps of fish are frequently turned over with rakes (Fig. 109) the teeth of which are made of

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Fig. 109 ($\frac{1}{3}\frac{1}{1}\frac{1}{1}$). Fish-Rake. Length, 60 cm.

[262] reindeer-antler. This fish, like the dried dog-salmon, is eaten in winter, dipped in seal-oil; or it is mixed with roots and boiled, and eaten as a gruel. If the summer is rainy, the heaps of *Salmo socialis* turn into one mal-odorous mass, which freezes with the advent of cold nights. In Itkana every house-owner stores up for winter two or three storehouses full of this small fish.

1: Jochelson E-5 (1900-01) 1908 R44 Koryak R44

Mollusks are gathered on the seashore and eaten by both the Maritime and the Reindeer Koryak, but are not considered a particularly delicate food. They are gathered mainly when there is not enough fish and other sea-food. Evidently mollusks were formerly eaten to a much greater extent. In excavating ancient underground houses of the Maritime Koryak at the mouth of the river Nayakhan, on a rocky coast rising about sixty metres above the sea, I found piles of shells of the following species:[1] *Purpura saxicola*, *Mytilus edulis*, *Mya arenaria*, and *Littorina grandis*. The same species are in use at present. Fig. 110 shows a pick made of bone of whale, with which to pick mollusks out of the shell. It is called kɪ|kă'-kuna (from kɪ|kăk, the Koryak name for *Littorina grandis*).

Fig. 110 (1/1½). Bone Pick for extracting Shell-Fish from Shells. Length, 10 cm.

The Reindeer Koryak eat the larva of the reindeer-fly (*Œstrus tarandi* Nordenskiöld, or *Tabanus tarandinus* Slunin), which develops under the skin of the reindeer. In spring, when the larvæ creep out from beneath the skin and settle on the hair, the Koryak gather and eat them. Herdsmen gather larvæ in their caps and bring them home as a treat for the children.

Vegetable Food. — Vegetable food plays a lesser rôle among the Koryak than among the Kamchadal, but a greater one than among the Chukchee. We have already learned from the myths that the ancestor of the Koryak, Big-Raven, was fond of berries, edible roots and herbs, and pudding prepared from them.

Koryak women gather edible roots from the burrows of red-backed mice, of which two species (*Evotomys latastei* and *Ev. Wosnessenskii*) are found in the Gishiga region and in the northern part of Kamchatka. In autumn, when the mice have laid in their winter supplies of roots, their burrows are dug up by means of picks, specimens of which are represented in Fig. 111; *a* representing an ancient form of root-digger, with a bone point tied to a wooden bow-shaped handle; while *b* shows the recent type, with an iron point, but preserving its former shape and the manner of attaching the point to the handle.

In locating the burrows of mice, aid is given by dogs which the women take along. The mice are in the habit of cleaning the roots of adhering particles of soil, and of placing them in rows in underground passages. It is deemed a sin to take away all the stores of a mouse. A small part of the supplies should be left. Besides, the burrows are not dug up late in the fall, that the mice may have ample opportunity to replenish their ravaged storerooms. I also found a belief current among the Koryak, widespread among other tribes of northeastern Siberia, that, on finding their storerooms emptied, the mice resort to suicide by hanging themselves in the crotches of branches.

[1] Identified by Dr. Louis P. Gratacap.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

X. — MANUFACTURES.

324 172 WORK IN STONE. — To judge from the stone implements preserved, it would seem that the Koryak, prior to their acquaintance with metals, had not fully acquired the art of making polished stone implements. At the present time, — which is still a period of transition from the use of stone to that of metal, — the stone tools still in use among them are mainly made by chipping.

324 With the exception of the stone tables and hammers, which are used without any artificial finish, just as they are found in the beds and on the banks of rivers, all the stone implements[1] mentioned before (see Figs. 135–137) are fashioned by means of chipping. Stone hatchets, spear-heads, harpoon-points, and scrapers for dressing skin, which are still in use, are roughly chipped out with small bone hammers (Fig. 134). The stone to be chipped is held in the left hand, the hammer in the right, and with its broad end the blows are delivered from above downwards on the edges of the stone. The thumb of the left hand is protected against accidental blows of the bone hammer by a bone thimble, and the fore-finger by a ring[2] (Fig. 134, *b*, *c*).

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Fig. 134. *a* (1/11), Bone Flaker; *b*, *c* (1/11), Finger-Protectors. ⅓ nat. size.

In the numerous irregular scratches on the broad end of the hammer may be discerned the traces from blows on the uneven stone edges. Bone rings are at present also used for protecting the fingers in carving wood with iron knives.

777] 172] Formerly stone arrow-heads were also made with the bone flaker here described. Fig. 135 shows three flint arrow-points. Such points have now gone out of use. Those in my collection were either obtained from people who preserved them as amulets or as keepsakes, or they were found by me in excavating ancient underground dwellings.

[1] See p. 569.

[2] It is interesting to compare with the small bone hammer of the Koryak a similar flaker for making arrow-points, of the Eskimo of Baffin Land, and their method of protecting the left hand against blows when chipping (see Boas, Baffin-Land Eskimo, Fig. 83, p. 63).

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

Fig. 136 represents a spear-head (*a*),[1] a harpoon-point (*b*), and an unfinished harpoon-point (*c*) of flint. The arrows and harpoon-heads are mostly made of flint, but partly of obsidian, which was formerly imported from Kamchatka. Spear-heads are made of flint as well as of quartz. Hatchets (see Fig. 103) and stone skin-scrapers are made mostly of quartz pebbles. The

Fig. 135.

Fig. 136.

Fig. 135, *a* ($\frac{3}{1}\frac{1}{1}\frac{5}{2}$), *b* ($\frac{3}{1}\frac{1}{1}\frac{5}{2}$), *c* ($\frac{3}{1}\frac{1}{1}\frac{5}{2}$) Flint Arrow-Points. ½ nat. size. *a*, From an old dwelling at Nayakhan; *b*, *c*, From Kamenskoye.

Fig. 136, *a* ($\frac{3}{1}\frac{1}{1}\frac{5}{2}$), *b* ($\frac{3}{1}\frac{1}{1}\frac{5}{2}$), *c* ($\frac{3}{1}\frac{1}{1}\frac{5}{2}$) Flaked Stone Points. ½ nat. size.

hatchets are chipped very little. The Koryak use for this purpose flat stones with somewhat sharp edges, found in the river-valleys.

Fig. 137 represents ancient slate knives for skin-cutting and other household work. The knives shown in *a* and *b* were found by me in excavating the ancient dwellings mentioned above; while *c* was found in the possession of a Koryak woman in the village of Kamenskoye, who treasured it as a keepsake. In the village of Kuel I found a fragment of such a knife used as a scraper. These relics exhibit traces of grinding and polishing. According to the Koryak, the edges of the knives were whetted with a flint or bone tool. The more or less even surfaces of the sides of the knives may be explained as due to the nature of the material, which readily splits into thin plates.

Sandstone ear-ornaments (Fig. 138, *a*) and pendants of braids (*b*) have also been finished by grinding. Stone ornaments of this kind are still worn by women in the villages of the Maritime Koryak. Nowadays they are finished with iron knives, and the perforations are bored with iron drills. Stone ear-rings are suspended from the ears by sinew-thread, or brass rings are passed through them, which are then put into the ears.

[1] A stone spear with shaft is shown in Fig. 93, p. 552.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

322 324 412 Nowhere among the Koryak did I find polished axes for wood-chopping. The chipped hatchets mentioned above could not have served this purpose. I found a polished stone axe among the Yukaghir on the Kolyma tundra. Steller[1] says that the Kamchadal used to polish stone implements by grinding them on stones. Dittmar[2] speaks of Kamchadal stone axes with polished blades. It is hard to believe that the Koryak never had any polished stone

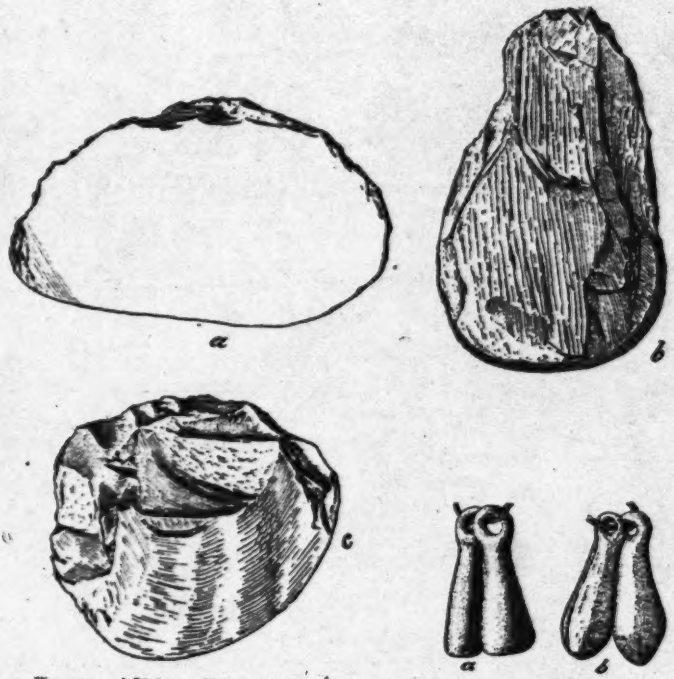

Fig. 137, *a* (5/16), *b* (5/16), *c* (5/16). Stone Knives. ½ nat. size.

Fig. 138, *a* (7/16), Stone Ear-Ornaments; *b* (5/16), Pendants of Braids. Nat. size.

[301]

axes. However, for wood-working, they made more use of bone wedges and of the bone adze.

324 354 Among the stone objects for household use should also be mentioned the stone lamps spoken of before[3] and the head-piece of the fire-drill.[4] Stone lamps are made, for the most part, of sandstone bowlders, in the upper side of which a cavity for the oil is made by means of an adze or chisel. For

[1] Steller, p. 319.
[2] Dittmar, p. 214.
[3] See Fig. 99, p. 566.
[4] See Part I, Fig. 2, *s*, p. 33.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

the head-piece of the fire-drill a small rounded quartz pebble is chosen; and on one side of this a socket for the upper end of the shaft of the drill is made by means of a drill (at present an iron drill).[1]

I have spoken before of the large flat stones which are used, without any artificial finish, for tables,[2] — one measuring 77 cm. in length and 48 cm. in width; another ($\frac{1}{2}$ size), 38 cm. in length and 28 cm. in width. It is interesting to compare these stone tables with the unworked sandstones found by Dr. H. Grimm in the excavations of ancient underground dwellings, evidently of the Ainu, on the island of Yezo.[3] Grimm does not suggest the use to which these stones may have been put by the former inhabitants of the underground dwellings.

The similarity of these dwellings, and the remains found in them, to the underground Koryak dwellings and the ancient utensils of the tribe found in excavations and preserved among them as keepsakes, suggests that the Maritime Koryak participate in a type of material culture formerly widespread over a considerable portion of the coasts and islands of the northern part of the Pacific Ocean. The flat sandstones described by Grimm seem to me to have done the same service among the former inhabitants of the underground houses on Yezo as the analogous stones still do among many Koryak, chiefly the Maritime Koryak of Penshina Bay.

Work in Iron. — At present Paren and Kuel, villages of the Maritime Koryak of Penshina Bay, are renowned for their manufacture of iron tools. The knives, axes, and spears of the Paren and Kuel blacksmiths, not only find a market among the Koryak and Chukchee, but even find their way to Kamchatka and to the neighboring Tungus.

Here two questions arise, — when did the Koryak become acquainted with iron implements, and from whom did they learn the art of the blacksmith?

In Kamchatka, Krasheninnikoff[4] heard stories to the effect that the Kamchadal were familiar with iron implements before they ever met the Russians. According to these stories, the Kamchadal used to get Japanese iron objects by barter from the Kurilians. Of course, this is possible; but there cannot have been any great amount of barter and no regular exchange between these tribes at that period. In this manner iron tools could have come into the hands of the Kamchadal in but very limited quantities, and would have become the property of a few fortunate families only. It seems important to note that while the tribes of northeastern Asia were still in the stone age, not only were nations as highly civilized as the Japanese and Chinese acquainted with iron, but even certain tribes of the Amur region,

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[1] See Part I, Plate VI.

[2] See pp. 569, 608.

[3] See H. Grimm, Beitrag zur Kenntnis der Korrobbogawa auf Yezo und Bemerkungen über die Shikotsu Ainu (Mitteilungen der Deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens in Tokio, Band V, pp. 369–373).

[4] See Krasheninnikoff, II, p. 49.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

326 177 412

and the Yakut, had been working it for a long time. Thus we may readily conceive that long before the Koryak and other northern natives met with the Russians, iron tools had come into the hands of those tribes through a long series of exchanges. Thus, for instance, on the Kolyma tundra I heard members of a northern Yukaghir clan tell, that, previous to the arrival of the Russians, they had had an iron axe, the property of the whole clan, which was in the keeping of "the Old Man," and was carried over the whole tundra whenever there happened to be need anywhere of knocking down or cutting in two a thick stout tree, which it was very hard to do with stone axes. An acquaintance of this kind, or even of a somewhat higher degree, may have existed also among the Koryak. They may have obtained iron objects, on the one hand from a Japanese source,[1] through the Kurilians and Kamchadal;[2] on the other hand, from a Manchurian-Chinese source, through the Tungus. According to historical data, based on reports of the Cossacks who had reached the mouth of the Okhota River in 1652, the Tungus living there were armed with iron and bone weapons, and clad in iron armor.[3] There is still a third source from which, during the pre-Russian period, iron objects may have been derived. I refer to the Yakut who represent the Mongol-Turkish people, who not only knew the metal and the art of forging it, but also the art of smelting iron from iron ores.[4]

Iron armor,[5] which supplanted the older leather or bone armor, or was still in use alongside of them, has, in my opinion, been known to the Koryak prior to their meeting with the Russians.

326 174

Let us now turn to the question of the beginning of blacksmithing among the Koryak. From which tribe did the Koryak learn to forge iron? To answer this question, too, is not easy. But since only in barter can there be intermediaries between producer and consumer, while in learning a trade

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[1] The Japanese armor found by Bogoras among the Chukchee in the northern tundra must evidently have reached there through pre-Russian commercial exchange (see Bogoras, The Chukchee, Vol. VII of this series, pp. 54, 164, and Fig. 85).

[2] The Cossacks who were sent from Anadyr in 1696 to conquer Kamchatka found Japanese documents in the Koryak dwellings of North Kamchatka. A little later they discovered, near Tighil, a Japanese vessel that had been wrecked (see Stortsuff, Historical Survey of Siberia, p. 136). This points to the possibility of occasional but direct intercourse in the past between the Koryak and Japanese.

[3] See Supplement to the Judicial Acts, III, pp. 333, 334.

[4] For data concerning the rôle of the Turkish tribes (to which the Yakut belong) in spreading the knowledge of iron-work in Siberia, see R. Andree, Die Metalle bei den Naturvölkern mit Berücksichtigungen prähistorischer Verhältnisse (Leipzig, 1884), pp. 126, 127. Popoff (Zeitschrift für Ethnologie, 1876, p. 461), in referring to the statement (mentioned by me in the text) concerning the iron weapons and armor of the Okhotsk Tungus at their first meeting with the Russians, expresses the opinion that the Okhotsk Tungus had become acquainted with iron objects through the Yakut; but considering the fact that the Yakut are comparatively recent arrivals in the extreme northeast of Siberia, and that the northern Tungus are supposed to have come north prior to the Yakut, from the district of the Amur River, it may be fully admitted that their acquaintance with iron, in one way or another, is more ancient, and derived ultimately from a Manchurian-Chinese source. Even in the most ancient European statements concerning the ancient Manchurians, who are kindred to the Tungus, mention is made of their helmets and cuirasses made of scale-like iron plates fastened to one another with nails, or arranged on a skin foundation (on this question see Schrenck, II, p. 259, and his references to Neuhof and Witsen).

[5] See Fig. 98, p. 562; and Plate XXIX, Fig. 1.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RYY

325 Koryak blacksmiths in summer. They make fires of driftwood, and pour water over the coals after the wood has burned over. Then they carry the coals over to the smithy in skin bags. The Koryak blacksmith has a special suit for his work. In summer he works bare to the waist, dressed only in old skin trousers, and in winter he puts on a worn fur coat. Of course, in severe cold no work at all is done in the smithy above described.

555 326 437 The blacksmiths of Kuel and Paren work both on merchants' orders and for the barter carried on by the artisans themselves. The Russian merchants supply the artisans with iron, and pay for the work with tea, tobacco, and other wares. Besides, the blacksmiths themselves acquire iron, hammer out knives and spears, and travel with these to the local fairs or the camps of nomad reindeer-breeders, and exchange the iron goods for reindeer-skins, meat, and furs. The last-named are afterward exchanged to merchants. Skilful blacksmiths, like those above mentioned, are paid special respect. As among all primitive peoples, the blacksmith's art is not viewed by the Koryak as a trade which every one can learn, but as a divine gift.[1] In Kuel and Paren, however, a considerable part of the Koryak can hammer iron; and in addition to the recognized talent, there are second-rate blacksmiths, who work periodically, before fairs, in order to acquire clothing and food in exchange for the products of their art. In general, the villages of Paren and Kuel may be considered as the centres of Koryak blacksmithing; while Kamenskoye is a commercial settlement in which are concentrated the Koryak intermediaries of exchange between the Russians and the "Reindeer men" (Koryak and Chukchee). In accordance with this, the Parenians and Kuelians, as representatives of labor, are poorer than the inhabitants of Kamenskoye, the representatives of commerce.

326 412 The articles hammered out are finished by the blacksmiths with files. The art of polishing iron is unknown to them. The work of Koryak blacksmiths is limited to side-arms, tools, and several other household objects.

Fig. 139 represents an axe (*a*) and an adze (*b*) made in Paren. The axe (ai'ḷan) is in the shape of a common Russian axe, and is used for chopping trees and wood. The adze (*b*) is mounted on a handle, axe-fashion, but its blade is set crosswise and is curved. This tool is called "axe with ears" (weḷō-aiḷan). It is used in hollowing out troughs and dug-out canoes, like a crooked adze (see Fig. 140, *b*).

Fig. 140, *a*, *b*, represents two adzes made in Paren. That marked *a* is a straight adze (ga'ttı). In shape it is an imitation of the ancient Koryak adze made of ivory or horn. Its handle is also curved, like that of a bone adze. The handle of the specimen here figured is made of bone of whale, but wooden handles also occur. The blade is mounted on the handle without

[1] Among the Yakut the blacksmiths stand on a level with the shamans. The Yukaghir blacksmiths have special protecting spirits. The position of the blacksmiths among the Tungus is similar.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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a lashing, and in this regard the iron adze differs from the ancient one made of bone. This adze serves for the rough hewing of the outer side of wood.

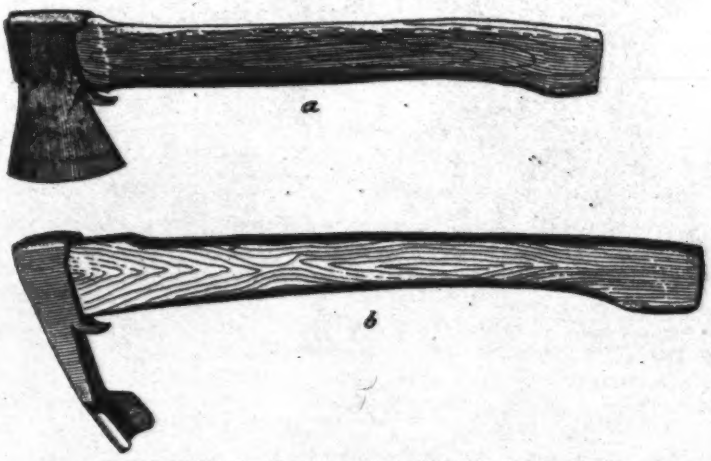

Fig. 139, *a* (${}^{2}/_{11}$). Axe (length, 53 cm.); *b* (${}^{2}/_{11}$). Adze (length, 45 cm.).

With it are hewn the runners and stanchions of sledges, snow-shoes, the frames of skin boats, etc., which are finished afterwards with knives.

Fig. 140, *b*, shows a curved adze (we|ō'ga'ttɪ, "adze with ears"), with

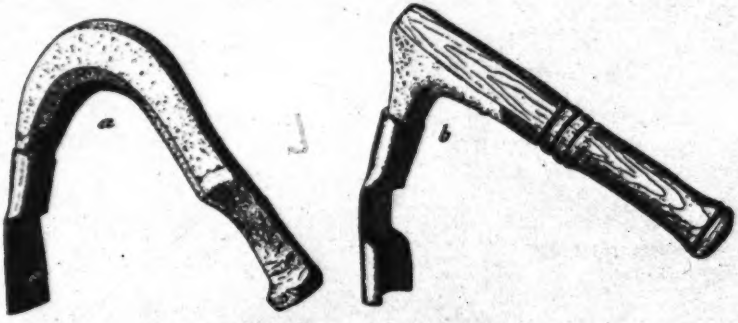

Fig. 140, *a* (${}^{2}/_{11}$), *b* (${}^{2}/_{11}$). Adzes. ½ nat. size.

which wooden buckets, troughs, dishes, and other wooden vessels,[1] are hollowed out. The handle of this adze consists of two parts, — one of wood, and one of bone, — which are spliced together.

[1] See pp. 570, 571.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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Fig. 141 shows a man's ordinary belt-knife, with a wooden sheath having tin rims and ears for suspending it on the belt. This knife, like all straight knives, has a thick back. It is called "belt-knife" (itr'-wal or yeče'twal), and is used in eating, and for working small wooden objects and carvings in bone. With this same knife, sharpened to a keen edge, hair is cut or shaved,[1] the hair on reindeer-skins designed for clothing is cut and reindeer are stabbed when killed for food and not intended as offerings. With this knife, too, fish is gutted for sun-drying. Women usually carry it stuck into the boot-leg. In very rare cases do women carry such knives at the belt.

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251]

A knife of the same form,

Fig. 141 ($\frac{1}{1\frac{1}{2}}$). Straight Knife and Sheath. $\frac{1}{3}$ nat. size.

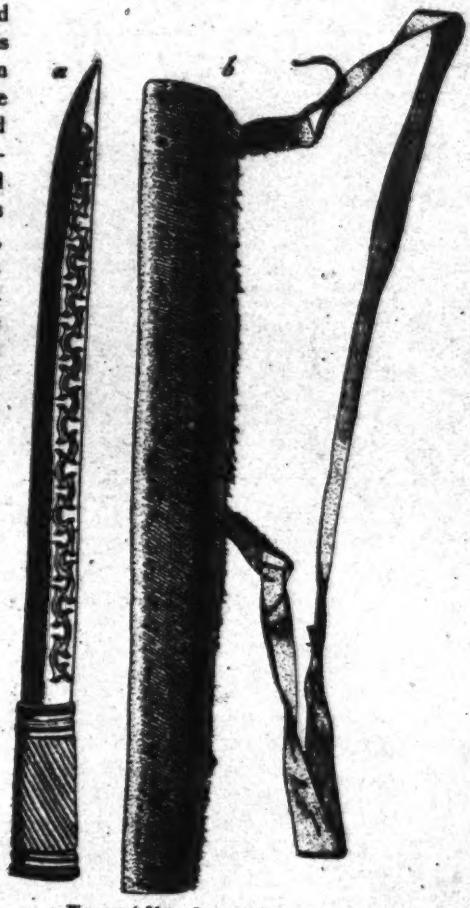

Fig. 142 ($\frac{1}{11\frac{1}{2}}$). Large Knife and Sheath. Length of knife, 56 cm.

but somewhat longer (including the haft, about 45 cm. in length), is called "hip-knife" (yō-wal), because it is not carried on the belt, but is tied to the

[1] See p. 604.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

right hip, under the coat, so as to be drawn easily with the right hand. With this knife animals are skinned and grass is cut, and with its back the foot-bones of animals are broken to extract the leg-marrow. 326 412

Fig. 142 represents a large knife with case, called "large knife" (ma'ihi-wal), "breast-collar or strap knife" (wa'gil-wal), or "knife carried on one's self" (a'mta-wal). It is carried like a sabre, across the shoulder, in a leather sheath (*b*) attached to a breast-collar. This knife was used even recently as a battle-weapon, like a short sabre, having supplanted the bone battle-knives made of the ribs of elks and wild reindeer. The sheath is of thong-seal skin sewed very roughly with sinew-thread. The short haft of the "large knife" is made [411]

Fig. 143 ($\frac{1}{2}\frac{1}{12}$). Point of Spear. Length of point, 30 cm.; total length, 175 cm.

Fig. 144. Iron Knives. *a* ($\frac{1}{2}\frac{1}{12}$), Woman's Knife (length, 28 cm.); *b* ($\frac{1}{2}\frac{1}{12}$), Carving-Knife (length, 20 cm.); *c* ($\frac{1}{2}\frac{1}{12}$), Straight Knife (length, 16 cm.); *d* ($\frac{1}{2}\frac{1}{12}$), Crooked Knife (length, 23 cm.).

of bone of whale. The style of ornamentation on this kind of iron-work will be discussed later on.[1] The major of "large knives" are made without ornament. They are made chiefly for the Reindeer Koryak. At present wood is split, and frozen meat and bones are chopped, with this kind of knife.

Fig. 143 represents a spear made by a Kuel smith. It is double-edged,

[1] See Chapter XI.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

326 412 long, narrow, ornamented, and well finished. The spears for every-day use are not ornamented. They are of simple and rough workmanship. Some spears are made with a ridge in the middle, which is also often met with on spears from the Amur region (see, Fig. 195).

Knives for special kinds of work are represented in Fig. 144. The woman's knife, *a* (ñau-wal) is of a sickle-shape, its form being an imitation of the ancient flat knife made of slate.[1]

281 412 177 The woman's knife has no sheath. It is kept in the work-bag, together with shavings of skin. With this knife, women cut skins and furs for clothing.[2] The cutting is done on a cutting-board. Koryak women rarely use scissors. Imported broadcloth for the upper coat, and calico for shirts, are also cut with the knife. Koryak blacksmiths do not manufacture scissors. The large shears shown by Bogoras[3] are the work of Yakut or Amur River blacksmiths. Yakut women cut skin for clothing with such scissors. Nevertheless Koryak women exhibited great joy when we presented them with ordinary narrow iron scissors in return for services rendered, or for submitting to being measured, and immediately pressed them into service.

321 531 322 Fig. 144, *b*, represents a knife with a long handle, specially used for carving in bone or wood. However, this knife is also called a belt-knife, and is worn at the belt in a sheath. Its wooden handle is covered with sheet-brass which is adorned with scratches made with the point of a knife, and evidently representing a technical ornament. Fig. 144, *c*, represents a straight knife (tami'ñu-wal, "working-knife"), and *d* a curved knife (keñi-wal, "curved knife"), used in carving bone and wood, and in hollowing out spoons, ladles, dippers, plates, and dishes.

326 412 Fig. 145 represents an iron chisel and an iron bow-drill for work in wood. The chisel (*a*) has a curved edge for making holes. The handle of the drill (*b*) and the bow are made of bone of whale. A similar bow-drill, only with a smaller point made of steel, is used also in riveting old kettles, and generally for boring in iron.

401 [372] 321 I did not happen to see a pump-drill in use. It is curious that the bow-drill is called in the Koryak language mi'lgttine ("fire-procuring"). This points to the fact that the use of the bow-drill for procuring fire had preceded

[1] Murdoch (The Point Barrow Eskimo, Fig. 106, p. 153) mentions an ancient large single-edged skin knife of this shape, belonging to the Eskimo, and supposes that it was used specially for cutting food. I am inclined to think that it was a woman's knife for cutting skin. Its shape is quite similar to the woman's iron knife of the Koryak, whose blacksmiths doubtless originally imitated ancient stone models. In Mason's article on the woman's knife of the Eskimo (Report of the U. S. National Museum, 1890, p. 421) are collected types of woman's knives of the Eskimo and certain Indian tribes from various localities. These illustrations show that nearly all — both the stone knives, and those of iron made in imitation of the stone ones — have a crescent-shaped blade, just as in the case of the woman's iron knife of the Koryak. Nearly all knives of which illustrations are given by Mason have handles like those of chopping-knives. Only in three of them (see Plates LIX, LXIV, and LXVIII, Figs. 1, 4, 2) do we see a handle on the side, just as on our woman's knife.

[2] Ornamented woman's knives are represented in Fig. 193.

[3] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 191, *c*, p. 160.

8: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

its use for drilling holes; but it is certain that the Koryak, prior to the introduction of iron, were already using either a stone or a bone bow-drill to bore holes with. It may be supposed that the holes in stone ear-rings must have been made by means of the drill.

Fig. 146 represents a saw made by the Reindeer Koryak for cutting reindeer-antlers. It is made of sheet-iron by means of a file, after the pattern of imported steel saws. The teeth of the saw are very uneven.

Nearly the whole of the Koryak blacksmith's work is confined to the iron tools above described. I should mention, in addition, the manufacture of kettles from imported sheet-iron by Koryak artisans. They beat these kettles out with hammers, and the bottoms are fastened on with mortise-locks, in imitation of the imported kettles, so that they arew ell suited for cooking-purposes. They do not make tin teapots, as they cannot solder on the spouts. The blacksmiths also make pick-axes for picking ice-holes, marline-spikes, awls for sewing dog's harness, scrapers for dressing skins,[1] paring-chisels, bracelets, and needle-holders.[2]

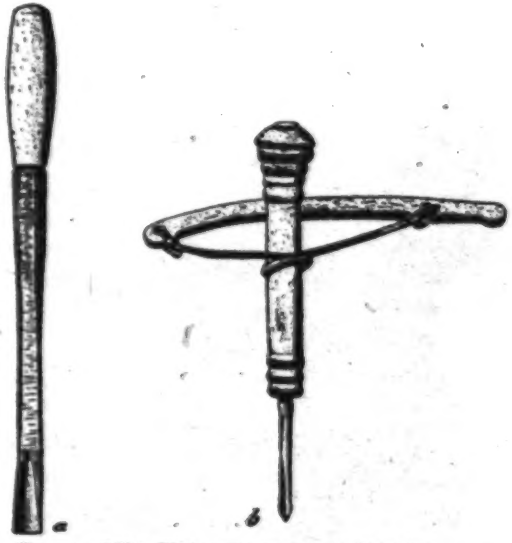

Fig. 145, *a* ($\frac{1}{12}$), Chisel (length, 25 cm.); *b* ($\frac{1}{12}$), Drill (length of drill, 30 cm.).

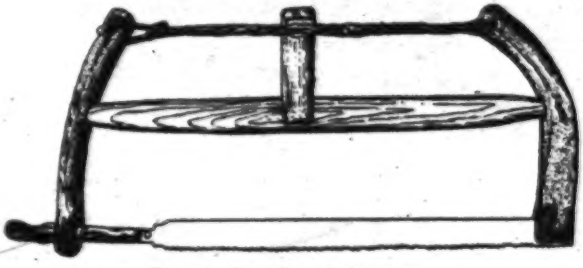

Fig. 146 ($\frac{1}{12}$). Saw. Length, 47 cm.

[1] See Fig. 189, *a*.

[2] See also iron fish-hook (Fig. 79, p. 534), harpoon and arrow heads (pp. 546, 559), bird-dart (Fig. 95, p. 558), armor (p. 562), picks (p. 578), and ice-creepers (Fig. 30, p. 605).

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

The love for silver ornaments is equally strong among the Tungus and the Yakut; among the latter, however, this passion has weakened of late, under the influence of civilization. They even preferred silver to gold, though the Yakut well know that gold is the more expensive metal, and though Yakut silversmiths know how to smelt gold, too. Even the poorest Tungus women have some silver ornaments on their dresses.

The Koryak, on the contrary, have no particular partiality for silver. Even the women of wealthy reindeer-breeders do not always possess silver ornaments. The color of copper or brass is more suited to their taste than the white color of silver. I remember that in Kamenskoye, when I offered a Koryak woman the choice between a wide brass ring with a shining shield and a narrow silver ring, she chose the former. A contrary result was obtained from the same experiment at another time with a Tungus woman.

The Koryak call silver ñaña-polou'ntın ("easily selling iron"). This name, therefore, expresses the superiority of silver over iron. The derivation of the word for "iron" is unknown. At any rate, it was not borrowed from the Russians.

WORK IN WOOD AND BONE. — Wood and bone objects, from tiny carvings up to sledges, are nowadays wrought only by means of the above-described iron tools. For fastening the parts of sledges and of the frames of skin boats, pegs of wood or iron are not used. Everything is tied with leather straps; but the Koryak are fond of joining their small chests for holding tea-dishes, or other objects, with steel nails obtained from the Russians. Household objects of wood have been described before,[1] and carvings will be discussed later. The netting-needle, and the vice used instead of iron pincers for finishing iron objects with a file, are made of wood.

In addition to the knife for cutting herring,[2] many other tools are made of bone, antler, or ivory. A thimble and ring of ivory, which protect the thumb and index-finger in chipping stone tools and working wood with the knife, have been described.[3] Fig. 150, *a*, shows a bone needle used in weaving baskets of grass. Fig. 150, *b*, represents a bone tool found by me in excavating an old underground dwelling at the mouth of the Nayakhan River. In shape it looks like an imitation of an iron hammer, but with this difference, that holes have been made in it for tying it to the handle by means of small leather straps. What its practical application may have been, is unknown. It is too small to have served for clubbing seals.[4] It was found with potsherds; and if its shape has been copied from an iron hammer, then the potsherds must be of very recent origin. Fig. 150, *c*, represents a pair of ear-rings carved out of walrus-tusk with a knife. In shape these ear-rings are an imitation of the stone ear-rings referred to before (see p. 610), but differ from them in having linear ornaments.[5]

[1] See p. 570. [2] See p. 573. [3] See p. 608. [4] See p. 545.
[5] See also bone lamp (p. 567), stool made of antler (p. 568), spoons (p. 571), fish-rake (p. 573), picks and pestle (pp. 577–579).

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

Of bone tools, the following, besides those already mentioned, are still in use: an axe of bone of whale, with which bark is peeled from trees to get gum, and with which sods are cut for covering the walls and roofs of underground houses;[1] a marline-spike (Fig. 151), which is indispensable on account of the extended use of lashings; bone combs[2] for combing sacrificial grass; and plant-stems for technical purposes. In the absence of iron, toggles and swivels for the dog-harness are made even now of bone or antler. For

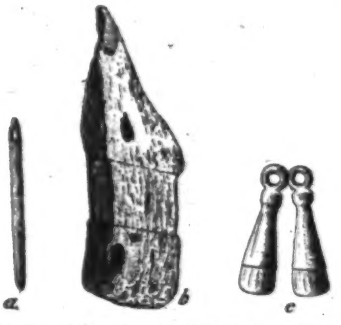

Fig. 150, *a* (11/12), Bone Needle (length, 4 cm.); *b* (11/12), Bone Implement of Unknown Use (length, 13.5 cm.); *c* (11/12), Bone Ear-Ornaments (length, 2.5 cm.).

Fig. 151 (1/12). Marline-Spike. Greatest length, 17 cm.

making bone swivels, a ring made of the bone of a mountain-sheep is placed in boiling water, in which it expands and softens. Through this is passed the small head of a bolt, usually cut out of a walrus-tusk. After drying, the ring contracts around the body of the bolt, and the head cannot come out. Finally may be mentioned the Koryak bone-scraper described by Bogoras.[3]

Woman's Tailor-Work. — All the clothing is made by women. The sewing for each family is done by the adult women, but girls from the age of twelve or thirteen on assist their grown-up relatives. Among the tailor's tools, the woman's knife has already been described.[4] Next, the needle and cutting-board should be mentioned. At present only imported steel needles are used. For sewing heavy skin clothing, only long thick needles are used. Special preference is given by the women to sailor's needles, with which they can pierce more easily than with round needles the thick skins used in winter for the inner sleeping-tents and the large outer tents. The cutting-boards are made in different sizes. For the most part, they are plain alder, poplar,

[1] It is curious to note that the bone axes that I have seen were mounted on a wooden handle, with the edge of the blade parallel to the handle, like iron axes, and not like adzes, as was formerly done. Thus, in the epoch of the transition from stone to metal is found not only the tendency to give metal tools the shape of tools of stone or bone, but also the contrary tendency to adopt for bone or stone tools the forms of imported iron tools.

[2] See Part I, Fig. 42, p. 97.

[3] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 147, p. 219.

[4] See p. 621.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

532 drawings of illustrated magazines, which may have influenced him; but his
825 skill and his native artistic instinct were inherited by him from Koryak ancestors.
517 In explanation of Fig. 183, I should add that the dog-harnesses, central line, and the lashings of the sledge, were made by Fletcher of leather. For the figure of the driver he made a wooden head with a face showing very well the Koryak type. The figure is dressed like other Koryak dolls.

532 *Household Articles ornamented with Carved Figures.* — I have stated
415 before that carvings were less frequently of practical use among the Koryak than among the Eskimo. Nevertheless small household articles ornamented with carved figures of men and animals, such as we find among the Eskimo, are also to be found among them. Figs. 184 and 185 are reproductions of such articles.

Fig. 184, *a*, is a dipper made from alder-wood in the settlement of Big Itkana (Penshina Bay). The handle of the dipper shows a carving representing

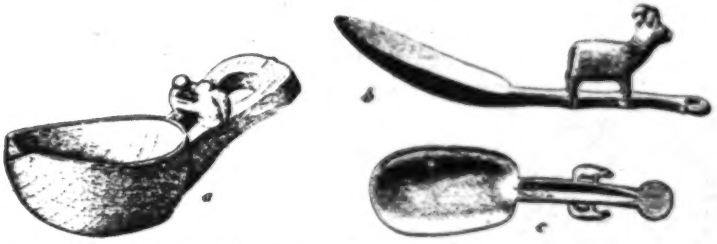

Fig. 184. Carved Dipper and Spoons. *a* ($\frac{2}{3}\frac{3}{8}\frac{3}{1}$). Dipper with Carving representing Wrestlers (length, 16.5 cm.); *b* ($\frac{2}{7}\frac{3}{8}\frac{3}{3}$). Spoon with Carving representing Mountain-Goat (length, 25 cm.); *c* ($\frac{2}{3}\frac{3}{8}\frac{3}{4}$). Spoon with Carving representing Two Bears (length, 14.5 cm.).

two wrestlers. Only the upper parts of the bodies are shown. Fig. 184, *b*, represents a spoon made on the shores of Bering Sea, from the horn of mountain-sheep. Fig. 184, *c*, was made from mountain-sheep horn in Alutor (Bering Sea). The handle is ornamented with carvings representing two bears.

[292] Among small articles ornamented with carved animals, our collection
[276] contains also belt-clasps with the figures of two seals, and a pipe with the figure of a seal, made from walrus-tusk in Kamenskoye (Penshina Bay).

● 412 Fig. 185 is also a reproduction of specimens of carvings made for orna-
532 mental purposes. That marked *a* represents a snow-beater made from antler of wild reindeer by a Reindeer Koryak of the Opuka River, and is ornamented with a carved head of a mountain-sheep; *b* represents an awl used by women in ornamenting their dress with slit-embroidery.[1] The handle of the awl was carved from wood in Big Itkana (Penshina Bay), and the orna-

[1] See p. 679.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

mentation represents a sledge with a team of eight dogs. Apparently the whole handle represents at the same time a bear, the point being the snout, the ears being indicated just under the sledge, and the two prominences on the lower side representing fore and hind feet. It resembles in form the bear figures used by the Eskimo in the cup-and-ball game.[1] The specimen shown in *c* is a pipe made of bone in Kamenskoye (Penshina Bay), and very crudely ornamented with the carving of a human face.

The Koryak carvings of animals on household articles follow the rule

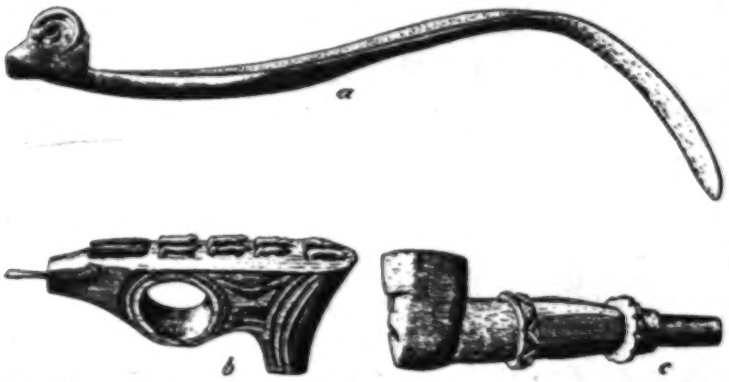

Fig. 185. *a* ($\frac{1}{11}\frac{1}{12}$), Snow-Beater (length, 52 cm.); *b* ($\frac{1}{11}\frac{1}{12}$), Awl (length, 11 cm.); *c* ($\frac{1}{11}\frac{1}{12}$), Pipe (length, 12.5 cm.).

of modern ornamental carvings, — that of serving to embellish and brighten up the ornamented article without obscuring it. For that reason, ornamental carving may retain its realistic character of pure art. Among the Indians of the North Pacific coast we find a tendency to cover the entire article with an ornamental animal. It has been pointed out by Professor Boas[2] that this tendency has resulted in depriving carvings of their realism. Judging by some illustrations of objects in the work of Nelson,[3] this inclination prevails to a considerable extent also among the Alaskan Eskimo. Professor Boas ascribes this tendency of the Alaskan Eskimo to the influence of the art of the adjacent Indians. Perhaps a trace of this proneness to turn an ornamental animal into a real article, certainly its inception, is to be found among the Koryak and Eskimo of other localities, but in a most primitive form. Thus the wooden cup for the whale festival among the Koryak[4] represents that animal. In the Eskimo collections from Point Barrow we find a bone

[1] See Boas, Central Eskimo, p. 566.

[2] See Boas, The Decorative Art of the Indians of the North Pacific Coast (Bulletin of the American Museum of Natural History, 1897, Vol. IX, p. 124).

[3] See Nelson, Plates XLII, LXII, and Figs. 40, 59, pp 144, 200.

[4] See Part I, Fig. 30, *A*, p. 72.

1: Jochelson E-5 (1900-01) 1908 R94 Koryak R94

Fig. 188, *b*, represents the knife which Axa used in carving his chain; *a* shows the sheath of the knife. The artist uses nothing but the knife in his work. Other Koryak also use curved knives.[1] The polishing of the carved articles is done with soft reindeer-skin. Considering the shape and size of the rings of Axa's chain, one cannot help admiring the precision of eye and the sense of symmetry of this primitive turner.

Fantastic Carvings. — Among the Koryak animal carvings, some are

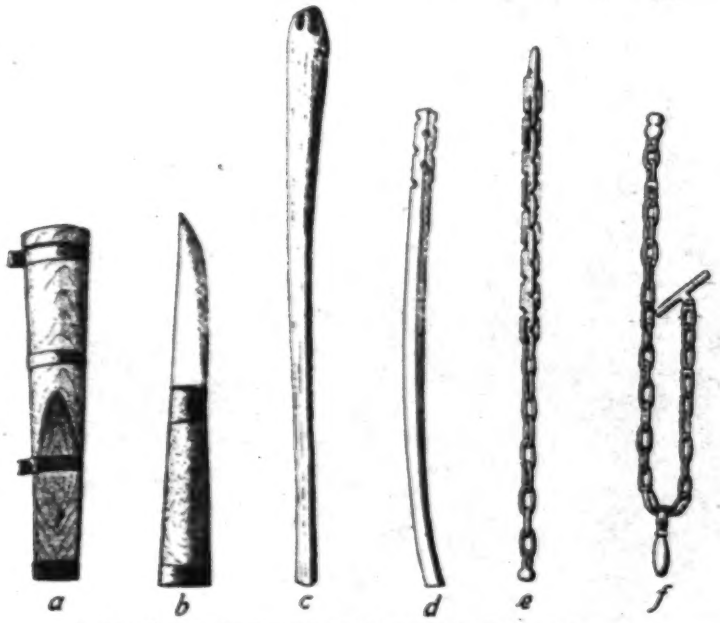

Fig. 188 ($\frac{1}{5}\frac{1}{7}\frac{1}{2}$). Carving-Knife with Sheath, Ivory Chain in Process of Manufacture, and Completed Chain. $\frac{1}{4}$ nat. size.

found with monstrous forms; for instance, in my collection there is a little figure of a partridge with two heads. The Koryak from whom I obtained this carving could give me no satisfactory explanation of it; and I do not know whether it was the product of the individual fancy of the artist, or whether it represents some mythical bird. Among the carvings of the Eskimo of Point Barrow, reproduced in Murdoch's work, we also find figures of animal monsters, among which there is an ivory carving of a ten-legged bear and a double-headed animal carved from antler.[2] Murdoch's illustration repre-

[1] See Fig. 144, *d*, p. 621.

[2] See Murdoch, Figs. 412, 414, 416, pp. 405–407.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

532 senting a giant holding a whale[1] recalls a Chukchee ivory carving in the collection of the Academy of Sciences at St. Petersburg, representing a human figure with three pairs of white whales on its breast.[2] This figure corresponds with the Chukchee myth of a giant who once came from the American shores to the Chukchee coast, where he went to sleep, and remained asleep all winter, while the white whales came out on the shore and gnawed at his flesh.[3]

531 ENGRAVINGS. — We have seen that the realistic animal carvings of the
171 Koryak, like those of the Eskimo, are frequently ornamented by means of incised designs consisting of plain dots, rings, or lines; but we do not find any complex engravings of patterns or figures of pictographic character, such as are found on the carvings of the Alaskan Eskimo.

Fig. 189. *a* ($\frac{1}{3}\frac{1}{5}\frac{1}{0}$). Skin-Scraper with Ornamented Handle (length, 46 cm.); *b*, Knife with Incised Designs (length, 37.5 cm.).

In the collection of carvings in the Museum of the Imperial Academy of Sciences at St. Petersburg, there are two bone pipes with engravings of diminutive figures of men and animals. These pipes were acquired among the Kerek, but had their origin among the insular Eskimo of Bering Sea.[4]

412 The tools and implements of the Koryak are mostly devoid of all
531 ornamental engravings. The few ornamental engravings which are found on the tools and other household articles may be divided into the following classes, — the simplest, or Eskimo-like: the pictographic, or engravings resembling those of the northern Indians of the interior and the Alaskan Eskimo: and the conventionalized, adopted from Asia. Figs. 189–191 represent specimens of the first group of ornamental engravings.

Fig. 189, *a*, represents an iron skin-scraper. Its wooden handle is ornamented with lines and zigzags. It was obtained in Paren.[5] Fig. 189, *b*,

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[1] Murdoch, Fig. 415, p. 406.

[2] Bogoras, Chukchee Material Life, Plate XX, Fig. 5.

[3] Ibid., p. 37.

[4] Ibid., Plate XXV, Figs. 8, 9.

[5] A similar ornamentation is found on the Eskimo bone knife and bone skin-dresser in Huffman's book, Plate XV, Fig. 3; and Plate XVIII, Fig. 2.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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represents a belt-knife of Koryak make. The blade is ornamented with a zigzag design. The wooden handle is entirely covered with brass, which is decorated by grooves and lines which enclose fields of hachure. We meet the zigzag ornamentation with acute or obtuse angles also in the ornamentation of garments (see, for instance, Figs. 209, 216).

413 531 294

Fig. 190 represents a woman's implement used in the ornamentation of funeral dress. It consists of a common handle made from walrus-tusk, with two flat chisel-edged awls of different widths which turn on pivots. When the smaller awl is required, the larger one is turned aside, and the smaller one is given a vertical position as required in use, and *vice versâ*. The ends of the awls are of iron, but in olden times they were of stone or bone. These tools are used in making slits at uniform intervals in seal-skins painted black.[1] Through the slits thus made are passed narrow strips of leather cut from the skin of a dog's throat. This skin, when finished, is whiter and finer than the finest chamois-skin. In this way, in the middle of the black strip of seal-skin, an ornamental ribbon is formed, in which the black and the white narrow strips or squares succeed one another (see Fig. 197). These strips are used in trimming the coats and other parts of funeral dress. The parallel lines engraved and etched lengthwise on the handle of the implement represent the strips of seal-skin, while the short parallel cross-lines represent the slits made by the awl. The line ornament on the implement may thus be called a textile ornament. The middle of the obverse of the handle, and the whole reverse, are decorated with a herring-bone pattern, with the apex towards the cutting-end. On the reverse of the handle the lateral lines of the herring-bone pattern cover the whole surface. The haft of the wider awl has the ribbon-ornament shown in the illustration, and consisting of alternate squares on three sides; while the design on the reverse face consists of the two diagonals, the four triangles thus formed being filled in by two or three triangles the sides of which are parallel to the diagonals. The reverse of the haft of the narrower awl is decorated with two intercrossing herring-bone designs covering the whole surface, — one with the apex towards the awl, the other with the apex towards the handle, — the middle line of the two being the same. The outer and inner sides of this handle are decorated with a peculiar irregular design, which apparently consists of a chain of rhombi, their obtuse angles adjoining, extending along the haft. In each rhombus an attempt seems to have been made to place another rhombus parallel to the outer one, while some of the intervening outer triangles

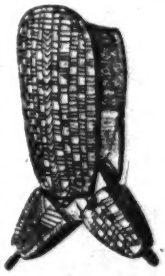

Fig. 190 ($\frac{1}{1\frac{1}{2}}$) Slitting-Tool. Length, 9 cm.

[1] This method of ornamentation will be described later on (see p. 679).

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

Figs. 193 and 194 represent specimens of engravings of a pictographic nature. Fig. 193 represents two women's knives.[1] Outlines of running reindeer are engraved on the blades by means of a steel awl. The outlines of the reindeer are somewhat inferior in vividness to the engravings of reindeer figures on ivory made by the Alaskan Eskimo; but allowance should be made for the material (iron) on which the Koryak artist engraved the reindeer. A middle line may be observed on the reindeer in *b*, which is absent in *a*, and consists of a series of minute vertical dashes. This line represents the spinal column.

Fig. 194 represents two cutting-boards[2] used by women in dress-making. The boards contain ornamental engravings on the under side. The patterns for dresses

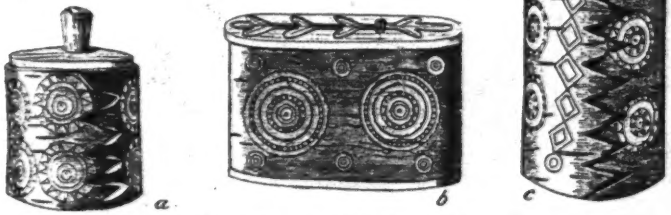

Fig. 192. *a* (), *b* (), *c* () Birch-Bark Boxes. Height, 6 cm., 7 cm., 14 cm.

are cut on the unornamented side. The boards are engraved by the men (the brothers or betrothed of the women to whom the boards belong), for amusement. The engravings consist of household and hunting-scenes; and the workmanship differs from that of most Eskimo engravings in that the figures of human beings and animals are not merely indicated by lines and by contours, but are cut out intaglio. Moreover, some parts of the figures are frequently made somewhat more prominent than others, after the manner of bas-reliefs, which makes the figure of the animal more vivid than ordinary engraved silhouettes.

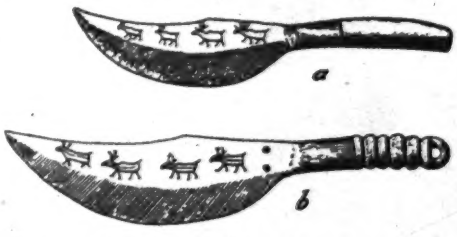

Fig. 193. *a* (), *b* () Knives with Incised Designs. Length, 26 cm., 29 cm.

Both specimens reproduced here were collected on the Palpal from Koryak living on the coast of Bering Sea: *a* was made on the Opuka River; *b*, on the Poqa'č River. In *a* is represented a scene from the life of fisher-

[1] See p. 621.

[2] See p. 627.